



AT&T Services, Inc.
2600 Camino Ramon, Rm 3E450Z
San Ramon, CA 94583

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May 31, 2013

JUL 12 2013

Mr. Barry Stephens
Department of Environment and Conservation
Tennessee Division of Air Pollution Control
9th Floor, L & C Annex
401 Church Street
Nashville, TN 37243

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TN. DIV. OF
AIR POLLUTION CONTROL

Dear Mr. Stephens:

On behalf of New Cingular Wireless PCS, LLC dba AT&T Mobility (referred to herein as "AT&T"), we are submitting the enclosed construction permit applications for approval of twenty nine (29) new Generac Model SD050 diesel-fired emergency generators rated at 50 kilowatts located at twenty nine (29) separate cell towers in Tennessee. Information regarding the facility locations can be found in the permit application forms in Attachment A.

The generators are to be installed in October 2013. The engines for each generator were manufactured in 2011 by Iveco and meet the U.S. EPA Tier 3 limits required for engines of this size. Attachment C of this letter contains the generator specifications.

Applicability to New Source Performance Standards (NSPS) Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines* will be based on the manufacture dates. AT&T is aware of engine NSPS/NESHAP requirements and will comply with those requirements as they apply to these engines. A summary of our understanding of the requirements is as follows:

Engines manufactured after April 1, 2006 are subject to New Source Performance Standards Subpart IIII, *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*, which requires:

- usage of a certified engine (per 40 CFR 60.4205(b) and 60.4211(c))
- operation and maintenance of the engine in accordance with the manufacturer's instructions (per 40 CFR 60.4206 and 60.4211(a))
- the emergency engine must be equipped with a non-resettable hour meter if not certified to meet non-emergency standards (per 40 CFR 60.4209(a))
- a limit of 100 hr/yr for non-emergency maintenance and testing purposes with up to 50 of the hours for non-emergency usage (per 40 CFR 60.4211(f))¹
- ULSD with a maximum sulfur content of 15 ppm is required to be purchased after October 1, 2010 (40 CFR 60.4207(b))

¹ The 100 hr/yr may also include operation in an emergency demand response program or when voltage or frequency deviations exceed 5% as defined under 40 CFR 60.4211(f)(2)(ii) and (iii).

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- maintain appropriate records and submit an annual report for Calendar Year 2015 and later years if the engine is > 100 hp and participates or is contractually obligated to participate for 15 hr/yr or more in an emergency demand response program, during voltage/frequency deviations of 5% or more, or participates in any financial arrangement defined by 40 CFR 60.4211(f)(3) (per 40 CFR 60.4214(d))

Since the new engines are at area sources, per 40 CFR 63.6590(c)(1), AT&T will also satisfy the requirements of the *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*, 40 CFR 63 Subpart ZZZZ, for the new engines by complying with NSPS Subpart IIII.

Each engine will be limited to a maximum of 500 hours per year of operation (with only 100 hours per year for non-emergency maintenance and testing purposes as allowed by NSPS Subpart IIII). Potential emissions, included in Attachment B, reflect the 500 hours per year limitation for emergency generators. Note the calculations have been performed using the U.S. EPA Tier 3 limits, AP-42 emission factors, and/or emission factors provided by the vendor and consider the maximum rated capacity of the engine for conservatism.

Please find attached complete sets of permit application forms for each of the emergency generators, including Tennessee Department of Environment and Conservation (TDEC) forms APC-20, APC-21, and APC-22, in Attachment A. Emission calculations for the new engines are included in Attachment B. Manufacturer's specifications and the EPA emissions certification forms are included in Attachment C. Additionally, a \$2,900 check is enclosed since potential emissions (when excluding CO₂) are less than 10 tpy from each engine (\$100 for each of the 29 sites).

AT&T appreciates TDEC's review of these applications. If you have any questions, or need further information, please do not hesitate to contact me at (925) 327-3532.

Sincerely,

AT&T SERVICES, INC.

A handwritten signature in black ink, appearing to read "Michele Blazek for".

Barbara Walden
Manager, Environment, Health & Safety

Attachments

ATTACHMENT A

APPLICATION FORMS

cookeville

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF AIR POLLUTION CONTROL



532-0554

9th Floor, L. & C Annex
401 Church Street
Nashville, TN 37243-1531
Telephone (615)
FAX (615) 532-0614

NOT TO BE USED FOR TITLE V APPLICATIONS

PERMIT APPLICATION

APC 20

PLEASE TYPE OR PRINT AND SUBMIT IN DUPLICATE FOR EACH EMISSION SOURCE. ATTACH APPROPRIATE SOURCE DESCRIPTION FORMS.

1. ORGANIZATION'S LEGAL NAME New Cingular Wireless PCS, LLC dba AT&T Mobility			/// FOR	APC COMPANY--POINT NO. 89-0177-01
2. MAILING ADDRESS (ST/RD/P.O. BOX) 2600 Camino Ramon, Room 3E450Z			/// APC	APC LOG/PERMIT NO. 962419
CITY San Ramon	STATE CA	ZIP CODE 94583	PHONE WITH AREA CODE (925) 327-2532	
3. PRINCIPAL TECHNICAL CONTACT Barbara Walden, EH&S Manager			PHONE WITH AREA CODE (925) 327-2532	
4. SITE ADDRESS (ST/RD/HWY) 230 H A Dillon Lane			COUNTY NAME Warren	
CITY OR DISTANCE TO NEAREST TOWN McMinnville		ZIP CODE 37110	PHONE WITH AREA CODE	
5. EMISSION SOURCE NO. (NUMBER WHICH UNIQUELY IDENTIFIES THIS SOURCE) GEN 1		PERMIT RENEWAL YES () NO (X)		

6. BRIEF DESCRIPTION OF EMISSION SOURCE

50 kW diesel-fired emergency generator (design rating) equipped with an engine rated at 70 kW (93 hp).

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7. TYPE OF PERMIT REQUESTED				
CONSTRUCTION (X)	STARTING DATE October 2013	COMPLETION DATE October 2013	LAST PERMIT NUMBER	EMISSION SOURCE REFERENCE NUMBER GEN 1
OPERATING ()	DATE CONSTRUCTION STARTED	DATE COMPLETED	LAST PERMIT NUMBER	EMISSION SOURCE REFERENCE NUMBER
LOCATION TRANSFER ()	TRANSFER DATE		LAST PERMIT NUMBER	EMISSION SOURCE REFERENCE NUMBER

ADDRESS OF LAST LOCATION

8. DESCRIBE CHANGES THAT HAVE BEEN MADE TO THIS EQUIPMENT OR OPERATION SINCE THE LAST CONSTRUCTION OR OPERATING PERMIT APPLICATION. N/A
--

9. SIGNATURE (APPLICATION MUST BE SIGNED BEFORE IT WILL BE PROCESSED) <i>Michele M Blazek</i>	DATE 6/5/2013
10. SIGNER'S NAME (TYPE OR PRINT) Michele M Blazek	TITLE Assistant Secretary PHONE WITH AREA CODE 925-327-2532



NOT TO BE USED FOR TITLE V APPLICATIONS

PROCESS OR FUEL BURNING SOURCE DESCRIPTION

APC21(& 24)

PLEASE TYPE OR PRINT, SUBMIT IN DUPLICATE AND ATTACH TO THE PERMIT APPLICATION.

1. ORGANIZATION NAME New Cingular Wireless PCS, LLC dba AT&T Mobility			/// FOR	APC COMPANY-POINT NO.
2. EMISSION SOURCE NO. (AS ON PERMIT APPLICATION) GEN 1		SIC CODE 4812	/// APC	APC PERMIT/LOG NO.
3. DESCRIPTION OF PROCESS OR FUEL BURNING UNIT Emergency use generator, GENERAC 5564-0 (SD-050). Engine manufactured after April 1, 2006. Rated at 50 kW; maximum engine output of 70 kW. Limited to 500 operating hours per year.				
4. NORMAL OPERATION: → Limited to 500 hours/year	HOURS/DAY N/A	DAYS/WEEK N/A	WEEKS/YEAR N/A	DAYS/YEAR N/A
5. PERCENT ANNUAL THROUGHPUT: →	DEC.-FEB. N/A	MARCH-MAY N/A	JUNE-AUG. N/A	SEPT.-NOV. N/A
6. TYPE OF PERMIT APPLICATION				(CHECK BELOW ONE ONLY)
PROCESS SOURCE: APPLY FOR A SEPARATE PERMIT FOR EACH SOURCE. (CHECK AT RIGHT, AND COMPLETE LINES 7, 8, 13, AND 14).				()
PROCESS SOURCE WITH IN-PROCESS FUEL: PRODUCTS OF COMBUSTION CONTACT MATERIALS HEATED. APPLY FOR A SEPARATE PERMIT FOR EACH SOURCE. (CHECK AT RIGHT, AND COMPLETE LINES 7, 8, AND 10 THROUGH 14)				()
NON-PROCESS FUEL BURNING SOURCE: PRODUCTS OF COMBUSTION DO NOT CONTACT MATERIALS HEATED. COMPLETE THIS FORM FOR EACH BOILER OR FUEL BURNER AND COMPLETE AN EMISSION POINT DESCRIPTION FORM (APC 22) FOR EACH STACK. (CHECK AT RIGHT, AND COMPLETE LINES 9 TO 14)				(X)
7. TYPE OF OPERATION: CONTINUOUS, ()		BATCH ()	NORMAL BATCH TIME	NORMAL BATCHES/DAY
8. PROCESS MATERIAL INPUTS AND IN-PROCESS SOLID FUELS	DIAGRAM* REFERENCE	INPUT RATES (POUNDS/HOUR)		/ (FOR APC USE ONLY) / SCC CODE
		DESIGN	ACTUAL	
A.				/
B.				/
C.				/
D.				/
E.				/
F.				/
G.				/
TOTALS				/

* A SIMPLE PROCESS FLOW DIAGRAM MUST BE ATTACHED.

(OVER)

9. BOILER OR BURNER DATA: (COMPLETE LINES 9 TO 14 USING A SEPARATE FORM FOR EACH BOILER)

BOILER NUMBER	STACK NUMBER**	TYPE OF FIRING***	RATED BOILER HORSEPOWER	RATED INPUT CAPACITY (10 ⁶ BTU/HR)	OTHER BOILER RATING (SPECIFY CAPACITY AND UNITS)
GEN 1	GEN 1	Internal Combustion Engine	93 (engine)	0.57 (engine)	70 kW (engine); 50 kW (generator)
BOILER SERIAL NO. N/A		DATE CONSTRUCTED N/A	DATE OF LAST MODIFICATION (EXPLAIN IN COMMENTS BELOW).		

** BOILERS WITH A COMMON STACK WILL HAVE THE SAME STACK NUMBER.

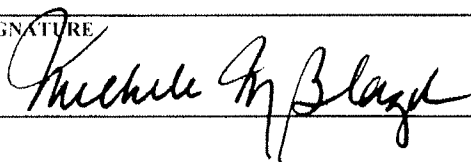
*** CYCLONE, SPREADER (WITH OR WITHOUT REINJECTION), PULVERIZED (WET OR DRY BOTTOM, WITH OR WITHOUT REINJECTION), OTHER STOKER (SPECIFY TYPE), HAND FIRED, AUTOMATIC, OR OTHER TYPE (DESCRIBE BELOW IN COMMENTS).

10. FUEL DATA: (COMPLETE FOR A PROCESS SOURCE WITH IN-PROCESS FUEL OR A NON-PROCESS FUEL BURNING SOURCE)

PRIMARY FUEL TYPE (SPECIFY)				STANDBY FUEL TYPE(S) (SPECIFY)			
Diesel Fuel Oil #2				N/A			
FUELS USED	ANNUAL USAGE	HOURLY USAGE		%	%	BTU VALUE OF FUEL	(FOR APC ONLY) SCC CODE
		DESIGN	AVERAGE	SULFUR	ASH		
NATURAL GAS:	10 ⁶ CUFT	CUFT	CUFT	/ / / / /	/ /		
#2 FUEL OIL: Primary	10 ³ GAL 2.08	GAL 4.15	GAL 4.15	0.0015	/ / / /	137,000 Btu/gal	
#5 FUEL OIL:	10 ³ GAL	GAL	GAL		/ / / /		
#6 FUEL OIL:	10 ³ GAL	GAL	GAL		/ / / /		
COAL:	TONS	LBS	LBS				
WOOD:	TONS	LBS	LBS	/ / / / / / / / / /	/ / / /		
LIQUID PROPANE:	10 ³ GAL	GAL	GAL	/ / / / / / / / / /	/ / / /		
OTHER (SPECIFY TYPE & UNITS.):							

11. IF WOOD IS USED AS A FUEL, SPECIFY TYPES AND ESTIMATE PERCENT BY WEIGHT OF BARK
N/A**12. IF WOOD IS USED WITH OTHER FUELS, SPECIFY PERCENT BY WEIGHT OF WOOD CHARGED TO THE BURNER.**
N/A**13. COMMENTS**

Source is limited to 500 operating hours per year and will operate as an emergency engine.

14. SIGNATURE**DATE**

6/5/2013



NOT TO BE USED FOR TITLE V APPLICATIONS

EMISSION POINT DESCRIPTION

APC 22

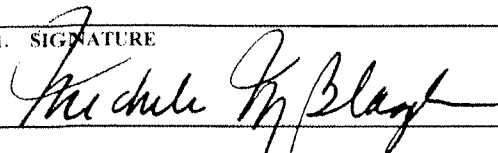
PLEASE TYPE OR PRINT AND SUBMIT IN DUPLICATE FOR EACH STACK OR EMISSION POINT.
ATTACH TO THE PERMIT APPLICATION.

1. ORGANIZATION NAME New Cingular Wireless PCS, LLC dba AT&T Mobility				///	APC COMPANY POINT NO.		
				FOR			
2. EMISSION SOURCE NO. (FROM APPLICATION) GEN 1		FLOW DIAGRAM POINT NUMBER		///	APC SEQUENCE NO.		
				APC			
3. LOCATION: →	LATITUDE 35°39'41.25"	LONGITUDE -85°47'01.37"	UTM VERTICAL		UTM HORIZONTAL		
4. BRIEF EMISSION POINT DESCRIPTION (ATTACH A SKETCH IF APPROPRIATE): Emergency use diesel generator designed for 50 kW, maximum engine output of 70 kW (93 hp).					DISTANCE TO NEAREST PROPERTY LINE (FT)		
COMPLETE LINES 5 AND 6 IF DIFFERENT FROM THAT ON THE PROCESS OR FUEL BURNING SOURCE DESCRIPTION (APC 21)							
5. NORMAL OPERATION: 500 hours / year →	HOURS/DAY ←	DAYS/WEEK ←	WEEK/YEAR ←		DAYS/YEAR ←		
6. PERCENT ANNUAL THROUGHPUT: →	DEC.-FEB.	MARCH-MAY	JUNE-AUG.		SEPT.-NOV.		
7. STACK OR EMISSION POINT DATA: →	HEIGHT ABOVE GRADE (FT) 7	DIAMETER (FT) 0.25	TEMPERATURE (°F) 930	% OF TIME OVER 125°F 100	DIRECTION OF EXIT (UP, DOWN OR HORIZONTAL)		
DATA AT EXIT CONDITIONS: →	FLOW (ACTUAL FT ³ /MIN.) 534	VELOCITY (FT/SEC) 181.3	MOISTURE (GRAINS/FT ³)		MOISTURE (PERCENT)		
DATA AT STANDARD CONDITIONS: →	FLOW (DRY STD. FT ³ /MIN) →	VELOCITY (FT/SEC)	MOISTURE (GRAINS/FT ³)		MOISTURE (PERCENT)		
8. AIR CONTAMINANTS	ACTUAL EMISSIONS				EMISSIONS* EST. METHOD	CONTROL DEVICES*	CONTROL EFFICIENCY%
	EMISSIONS (LBS/HR) AVERAGE	MAXIMUM	CONCENTRATION	AVG. (TONS/YR)			
PARTICULATES	0.06	0.06	8.82 E-04 lb/kW-hr	0.02	5 (Tier 3)	None	N/A
SULFUR DIOXIDE	1.13E-03	1.13E-03	1.21 E-05 lb/hp-hr	2.82E-04	3	None	N/A
CARBON MONOXIDE	0.77	0.77	1.10 E-02 lb/kW-hr	0.19	5 (Tier 3)	None	N/A
ORGANIC COMPOUNDS	0.02	0.02	2.65 E-04 lb/kW-hr	4.63E-03	5 (Vendor)	None	N/A
NITROGEN OXIDES	0.73	0.73	1.04 E-02 lb/kW-hr	0.18	5 (Tier 3)	None	N/A
FLUORIDES							
OTHER(SPECIFY) GHG as CO ₂ e	126	126	1.80 lb/kW-hr	31.48	5 (Vendor)	None	N/A
OTHER(SPECIFY) Single HAP	7.68E-04	7.68E-04	8.26 E-06 lb/hp-hr	1.92 E-04	3	None	N/A
OTHER(SPECIFY) Total HAPs	2.47E-03	2.47E-03	2.65 E-05 lb/hp-hr	6.17 E-04	3	None	N/A

(OVER)

9. CHECK TYPES OF MONITORING AND RECORDING INSTRUMENTS THAT ARE ATTACHED:OPACITY MONITOR (), SO₂ MONITOR (), NO_x MONITOR (), OTHER (SPECIFY IN COMMENTS) ()**10. COMMENTS**

Emissions calculated based on the generator operating at full capacity for 500 hours per year, maximum engine rating, and Tier 3 emission factors for CO, NO_x, and PM. Vendor factors used for VOC and GHG. AP-42 factor from Section 3.4 used for SO₂ along with 15 ppm S content.

11. SIGNATURE**DATE**

6/5/2013

* REFER TO THE BACK OF THE PERMIT APPLICATION FORM FOR ESTIMATION METHOD AND CONTROL DEVICE CODES.

** EXIT GAS PARTICULATE CONCENTRATION UNITS: PROCESS — GRAINS/DRY STANDARD FT³ (70°F); WOOD FIRED BOILERS — GRAINS/DRY STANDARD FT³ (70°F); ALL OTHER BOILERS — LBS/MILLION BTU HEAT INPUT.

*** EXIT GAS SULFUR DIOXIDE CONCENTRATIONS UNITS: PROCESS — PPM BY VOLUME, DRY BASES; BOILERS — LBS/MILLION BTU HEAT INPUT.

230 H A Dillon, McMinnville (Warren County)

ATTACHMENT B

EMISSIONS CALCULATIONS

AT&T
Emission Calculations

Emission Calculations - Generac SD050 with Iveco Engine

Diesel Fuel Emission Factors

Pollutant	Vendor Emission Factors ¹ (lb/kW-hr)	Tier 3 Emission Factors (lb/kW-hr)	AP-42 Emission Factors ² (lb/hp-hr)
NO _x	9.48E-03	1.04E-02	
CO	2.87E-03	1.10E-02	
PM ₁₀	7.50E-04	8.82E-04	
PM _{2.5}	7.50E-04	8.82E-04	
SO ₂ ³			1.21E-05
VOC	2.65E-04		
GHG (CO ₂ e) ⁴	1.80E+00		
HAP (total) ⁵			2.65E-05
HAP (single) ⁶			8.26E-06

1. Emission factors per Generac Statement of Exhaust Emissions for 2011 IVECO engine in SD050 generator or as provided by Generac personnel.
2. Emission factors per AP-42 Section 3.3 (10/1996) Table 3.3-1 Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines.
3. Based on fuel sulfur content of (%): 0.0015% as required by NSPS Subpart IIII. Factor is based on Section 3.4 emission factor since Section 3.3 factor does not vary with sulfur content.
4. CO₂ emissions based on vendor data. CH₄ and N₂O emissions are negligible compared to CO₂ emissions. CO₂ converted to CO₂ equivalent (CO₂e) using a Global Warming Potential of 1.
5. Summation of factors from AP-42 Section 3.3 (10/1996), Table 3.3-2, *Speciated Organic Compound Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines*.
6. Highest single HAP emission factor is for Formaldehyde.

Engine Information

Engine Maximum Output (kW) ¹	Engine Output at 100% Load (hp) ¹	Fuel Consumption (gal/hr) ¹	Heat Input (MMBtu/hr) ²
70	93	4.15	0.57

1. Based on manufacturer's specification for maximum engine output.
2. Based on fuel consumption rate and diesel heat content of 137,000 Btu/gal per AP-42 Appendix A.

Maximum Hourly Emission Rate

Pollutant	Potential Emissions (lb/hr) ¹	(tpy) ²
NO _x	0.73	0.18
CO	0.77	0.19
PM ₁₀	0.06	0.02
PM _{2.5}	0.06	0.02
SO ₂	1.13E-03	2.82E-04
VOC	0.02	4.63E-03
GHG (CO ₂ e)	125.93	31.48
HAP (total)	2.47E-03	6.17E-04
HAP (single)	7.68E-04	1.92E-04

1. Maximum hourly emissions for each generator equal the engine maximum output times the respective emission factor. Factors were based on either the maximum of the vendor or Tier 3 factors, where available. AP-42 factors were used where EPA or vendor data were not provided.
2. Annual emissions based on maximum hourly emission rate and annual operating hours of:

500

ATTACHMENT C

MANUFACTURER SPECIFICATIONS

SD050

CUSTOM MODEL

GENERAC® INDUSTRIAL POWER

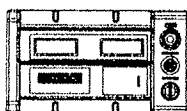
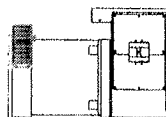
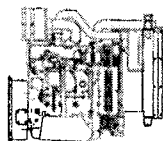
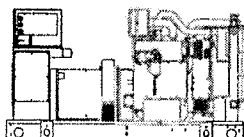
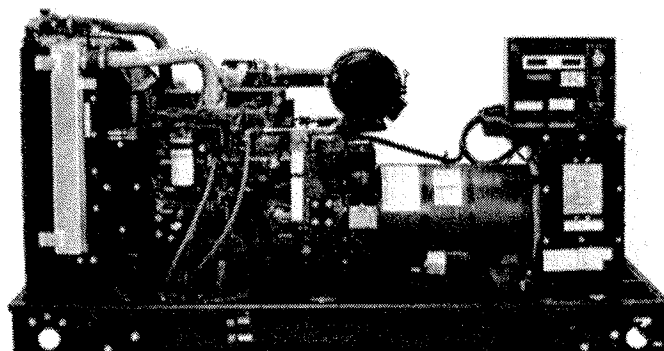
Industrial Diesel Generator Set

EPA Emissions Certification: Tier III

50 kW Diesel

1 of 5

Standby Power Rating
50KW 60 Hz



features

benefits

Generator Set

- PROTOTYPE & TORSIONALLY TESTED
 - UL2200 TESTED
 - RHINOCOAT PAINT SYSTEM
 - SOUND LEVEL 2 ENCLOSURE
- ▶ PROVIDES A PROVEN UNIT
 - ▶ ENSURES A QUALITY PRODUCT
 - ▶ IMPROVES RESISTANCE TO ELEMENTS
 - ▶ 71dba @ 7 METERS (23FT)

Engine

- EPA TIER CERTIFIED
 - INDUSTRIAL TESTED, GENERAC APPROVED
 - POWER-MATCHED OUTPUT
 - INDUSTRIAL GRADE
- ▶ ENVIRONMENTALLY FRIENDLY
 - ▶ ENSURES INDUSTRIAL STANDARDS
 - ▶ ENGINEERED FOR PERFORMANCE
 - ▶ IMPROVES LONGEVITY AND RELIABILITY

Alternator

- TWO-THIRDS PITCH
 - LAYER WOUND ROTOR & STATOR
 - CLASS H MATERIALS
 - DIGITAL 3-PHASE VOLTAGE CONTROL
- ▶ ELIMINATES HARMFUL 3RD HARMONIC
 - ▶ IMPROVES COOLING
 - ▶ HEAT TOLERANT DESIGN
 - ▶ FAST AND ACCURATE RESPONSE

Controls

- ENCAPSULATED BOARD W/ SEALED HARNESS
 - 4-20mA VOLTAGE-TO-CURRENT SENSORS
 - SURFACE-MOUNT TECHNOLOGY
 - ADVANCED DIAGNOSTICS & COMMUNICATIONS
- ▶ EASY, AFFORDABLE REPLACEMENT
 - ▶ NOISE RESISTANT 24/7 MONITORING
 - ▶ PROVIDES VIBRATION RESISTANCE
 - ▶ HARDENED RELIABILITY

primary codes and standards



SD050

application and engineering data

ENGINE SPECIFICATIONS

General

Make	Iveco / FPT
EPA Emissions Compliance	Tier III
EPA Emissions Reference	See Emissions Data Sheet
Cylinder #	4
Type	Diesel
Displacement - L (cu. in.)	4.5 (274)
Bore - mm (in.)	105 (4.1)
Stroke - mm (in.)	132 (5.2)
Compression Ratio	17.5:1
Intake Air Method	Turbocharged
Cylinder Head Type	2 Valve
Piston Type	Aluminum
Crankshaft Type	Forged Steel
Engine Block Type	Cast Iron / Wet Sleeve

Engine Governing

Governor	Electronic Isochronous
Frequency Regulation (Steady State)	+/- 0.25%

Lubrication System

Oil Pump Type	Gear
Oil Filter Type	Full Flow
Crankcase Capacity - L (gal)(qts)	13.6 (3.6) (14.4)

Cooling System

Cooling System Type	Closed
Water Pump	Belt Driven Centrifugal
Fan Type	Pusher
Fan Blade Number	2538 (10)
Fan Diameter (in.)	26
Coolant Heater Wattage	1500
Coolant Heater Standard Voltage	120

Fuel System

Fuel Type	Ultra Low Sulfur Diesel Fuel
Fuel Specifications	ASTM
Fuel Filtering (microns)	5
Fuel Inject Pump Make	Standyne
Fuel Pump Type	Engine Driven Gear
Injector Type	Mechanical
Engine Type	Direct Injection
Fuel Supply Line - mm (in.)	1/4 inch Npt
Fuel Return Line - mm (in.)	1/4 inch Npt

Engine Electrical System

System Voltage	12VDC
Battery Charging Alternator	90 Amp
Battery Size (at 0 oC)	Optima Redtop
Battery Group	34
Battery Voltage	12VC
Ground Polarity	Negative

ALTERNATOR SPECIFICATIONS

Standard Model	390
Poles	4
Field Type	Revolving
Insulation Class - Rotor	H
Insulation Class - Stator	H
Total Harmonic Distortion	< 3.5%
Telephone Interference Factor (TIF)	< 50
Standard Excitation	PMG
Bearings	Single Sealed Cartridge
Coupling	Direct, Flexible Disc
Load Capacity - Standby	100%
Load Capacity - Prime	100%
Prototype Short Circuit Test	Y

Voltage Regulator Type	Digital
Number of Sensed Phases	All
Regulation Accuracy (Steady State)	+/- 0.25%

CODES AND STANDARDS COMPLIANCE (WHERE APPLICABLE)

NFPA 99
 NFPA 110
 ISO 8528-5
 ISO 1708A.5
 ISO 3046
 BS5514
 SAE J1349
 DIN6271
 IEEE C62.41 TESTING
 NEMA ICS 1

Rating Definitions:

Standby - Applicable for a varying emergency load for the duration of a utility power outage with no overload capability. (Max. load factor = 70%)

Prime - Applicable for supplying power to a varying load in lieu of utility for an unlimited amount of running time. (Max. load factor = 80%) A 10% overload capacity is available for 1 out of every 12 hours.

SD050

operating data (60Hz)

POWER RATINGS (kW)

Single-Phase 120/240VAC @1.0pf
 Three-Phase 120/208VAC @0.8pf
 Three-Phase 120/240VAC @0.8pf
 Three-Phase 277/480VAC @0.8pf
 Three-Phase 346/600VAC @0.8pf

STANDBY		
50	Amps:	208
-	Amps:	-
-	Amps:	-
-	Amps:	-
-	Amps:	-

NOTE: Generator output limited to 700A.

STARTING CAPABILITIES (sKVA)

		sKVA vs. Voltage Dip											
		480VAC						208/240VAC					
Alternator*	kW	10%	15%	20%	25%	30%	35%	10%	15%	20%	25%	30%	35%
Standard	50	-	-	-	-	-	-	26	39	52	65	77	90
Upsize 1		-	-	-	-	-	-	-	-	-	-	-	-
Upsize 2		-	-	-	-	-	-	-	-	-	-	-	-

*All Generac industrial alternators utilize Class H insulation materials. Standard alternator provides less than or equal to Class B temperature rise. Upsize 1 provides less than or equal to Class B temperature rise. Upsize 2 provides less than or equal to Class B temperature rise.

FUEL

Fuel Consumption Rates

Fuel Pump Lift - in (m)

36(.9)

STANDBY

Percent Load	gph	lph
25%	1.52	5.75
50%	2.53	8.82
75%	3.08	11.65
100%	4.15	15.71

COOLING

Coolant System Capacity - Gal (L)

4.5 (17.44)

Maximum Radiator Backpressure

1.5" H₂O Column

STANDBY

Coolant Flow per Minute	gpm (lpm)	32.7(123.8)
Heat rejection to Coolant	BTU/min	123,000
Inlet Air	cfm (m ³ /min)	6,360 (180.0)
Max. Operating Radiator Air Temp	F° (C°)	122(50)
Max. Operating Ambient Temperature	F° (C°)	122(50)

COMBUSTION AIR REQUIREMENTS

Intake Flow at Rated Power

cfm (m³/min)

247

(7.00)

EXHAUST

Exhaust Outlet Size (Open Set)

3.0"

Maximum Backpressure (Post-Silencer)

1.5" Hg

STANDBY

Exhaust Flow (Rated Output)	cfm (m ³ /hr)	534(906.7)
Maximum Backpressure	inHg (Kpa)	1.5 (5.1)
Exhaust Temp (Rated Output)	F° (C°)	930(498.8)

ENGINE

Rated Engine Speed	rpm	1800
Horsepower at Rated kW	hp	93
Temperature Deration		Consult Factory
Altitude Deration		Consult Factory

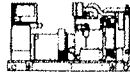
* CA units include aftertreatment

Deration - Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions. Please consult a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528 and DIN6271 standards.

SD050

standard features and options

GENERATOR SET



● Genset Vibration Isolation	Std
● Factory Testing	Std
● Extended warranty	Std
● Padlockable Doors	Std
● Steel Enclosure (Enclosed Models)	Std
○ Remote Emergency Shutdown	Opt

ENGINE SYSTEM



General	
● Oil Drain Extension	Std
● Air Cleaner	Std
● Industrial Exhaust Silencer (Open Sets, ship loose)	Std
● Critical Exhaust Silencer (Enclosed Sets)	Std
● Stainless steel flexible exhaust connection	Std
Fuel System	
● Primary Fuel Filter with Water Separator	Std
● Flexible Fuel Lines	Std
● UL142 Fuel Tank, 48 Hr Runtime	Std
● 2 Gal Overflow Containment with Alarm	Std

Cooling System	
● 120VAC Coolant Heater (3-wire connection cord)	Std
● 50%/50% Coolant	Std
● Level 1 Guarding (Open Sets)	Std
● Closed Coolant Recovery System	Std
● UV/Ozone resistant hoses	Std
● Factory-Installed Radiator	Std
● Radiator Drain Extension	Std
● Fan guard	Std
● Radiator duct adapter (Open Sets)	Std
●	

Engine Electrical System	
● Battery charging alternator	Std
● Battery cables	Std
● Battery tray	Std
● 75W 120VAC Battery heater	Std
● Solenoid activated starter motor	Std
● 10A UL float/equalize battery charger	Std
● Weather Resistant electrical connections	Std
● Duplex GFCI Convenience Outlet	Std

ALTERNATOR SYSTEM



● UL2200 GENprotect™	Std
● 100% Rated 200A Main Line Circuit Breaker	Std

CONTROL SYSTEM



Control Panel	
● Digital H Control Panel - Dual 4x20 Display	Std
● Programmable Crank Limiter	Std
● 7-Day Programmable Exerciser (requires H-Transfer Switch)	Std
● Special Applications Programmable PLC	Std
● RS-232	Std
● RS-485	Std
● All-Phase Sensing DVR	Std
● Full System Status	Std
● Utility Monitoring (Req. H-Transfer Switch)	Std
● 2-Wire Start Compatible	Std
● Power Output (kW)	Std
● Power Factor	Std
● Reactive Power	Std
● All phase AC Voltage	Std
● All phase Currents	Std
● Oil Pressure	Std
● Coolant Temperature	Std
● Coolant Level	Std
● Low Fuel Pressure Indication	Std
● Engine Speed	Std
● Battery Voltage	Std
● Frequency	Std
● Date/Time Fault History (Event Log)	Std
● UL2200 GENprotect™	Std
○ Low-Speed Exercise	Opt
● Isochronous Governor Control	Std
● -40deg C - 70deg C Operation	Std
● Weather Resistant Electrical Connections	Std
● Audible Alarms and Shutdowns	Std
● Not in Auto (Flashing Light)	Std
● On/Off/Manual Switch	Std
● E-Stop (Red Mushroom-Type)	Std
○ Remote E-Stop (Break Glass-Type, Surface Mount)	-
○ Remote E-Stop (Red Mushroom-Type, Surface Mount)	-
○ Remote E-Stop (Red Mushroom-Type, Flush Mount)	-
● NFPA 110 Level I and II (Programmable)	Std
● Remote Communication - RS232	Std

Alarms (Programmable Tolerances, Pre-Alarms and Shutdowns)

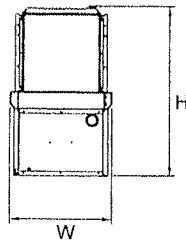
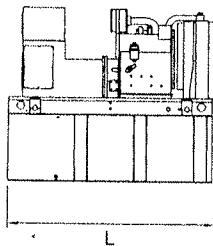
● Low Fuel	Std
● Oil Pressure (Pre-programmed Low Pressure Shutdown)	Std
● Coolant Temperature (Pre-programmed High Temp Shutdo	Std
● Coolant Level (Pre-programmed Low Level Shutdown)	Std
● Engine Speed (Pre-programmed Overspeed Shutdown)	Std
● Voltage (Pre-programmed Overvoltage Shutdown)	Std
● Battery Voltage	Std

Other Options

● Single Side Service	
○	
○	

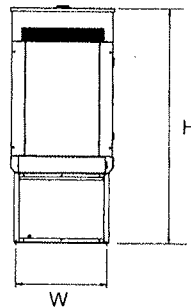
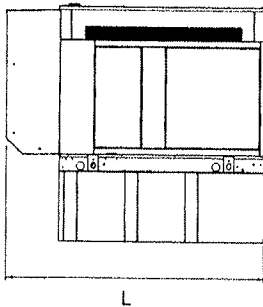
SD050

dimensions, weights and sound levels



OPEN SET

RUNTIME HOURS	CAPACITY (GAL)	TANK VOLUME	TANK SIZE				WT	dBA*
			L	W	H			
-	-	-	-	-	-	-	-	84
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
48	210	210	76	38	87	3400	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-



LEVEL 2 SOUND ENCLOSURE

RUNTIME HOURS	CAPACITY (GAL)	TANK VOLUME	TANK SIZE				WT	dBA*
			L	W	H			
-	-	-	-	-	-	-	-	71
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	
48	210	210	94.8	38	99	3935	-	
-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-

*Required gallons based on 100% of standby rating. Weights consider steel enclosure and are without fuel in tank. Sound levels measured at 23ft (7m) and does not account for ambient site conditions.

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please consult a Generac Power Systems Industrial Dealer for detailed installation drawings.

Generac Power Systems, Inc. • S45 W29290 HWY. 59, Waukesha, WI 53189 • generac.com

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GENERAC®

STATEMENT OF EXHAUST EMISSIONS 2011 IVECO DIESEL FUELED GENERATOR

The measured emission values provided here are proprietary to Generac and its' authorized dealers. This information may only be disseminated upon request, to regulatory governmental bodies for emissions permitting purposes or to specifying organizations as submittal data when expressly required by project specifications, and shall remain confidential and not open to public viewing. This information is not intended for compilation or sales purposes and may not be used as such, nor may it be reproduced without the expressed written permission of Generac Power Systems, Inc. The data provided shall not be meant to include information made public by Generac.

Generator Model:	SD050	Aspiration:	Turbocharged
kW _e Rating:	50	Rated RPM:	1800 RPM
Engine Family:	BVEXL04.5DTD	EPA Certificate #:	VEX-STNRCI-11-07
Engine Model:	F4GE9455B*J	CARB Certificate #:	U-R-015-0210
Rated Engine Power (BHP)*:	79	SCAQMD CEP #:	PENDING
Fuel Consumption (gal/hr)*:	4.15	Emission Std. Category:	Tier 3

*Engine Power and Fuel Consumption are declared by the Engine Manufacturer of Record and the U.S. EPA.

**Emissions based on declared Rated BHP of specific Engine Models.
(These values are Actual Exhaust Emissions during a 5-Mode test based on declared Rated BHP.)**

CO	NOx + NMHC	PM	
1.3	4.3	0.34	Grams/kW-hr
1.0	3.2	0.25	Grams/bhp-hr

- The stated values are actual exhaust emission test measurements obtained from an engine representative of the type described above.
- Values based on 5-mode testing are official data of record as submitted to regulatory agencies for certification purposes. Testing was conducted in accordance with prevailing EPA & CARB protocols, which are typically accepted by SCAQMD and other regional authorities.
- No emission values provided above are to be construed as guarantees of emission levels for any given Generac generator unit.
- Generac Power Systems reserves the right to revise this information without prior notice.
- Consult state and local regulatory agencies for specific permitting requirements.
- The emission performance data supplied by the equipment manufacturer is only one element required toward completion of the permitting and installation process. State and local regulations may vary on a case-by-case basis and must be consulted by the permit applicant/equipment owner prior to equipment purchase or installation. The data supplied herein by Generac Power Systems cannot be construed as a guarantee of installability of the generating set.

INDUSTRIAL SALES
P.O. BOX 8 WAUKESHA, WI 53187 262-544-4800 FAX 262-544-4854



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF TRANSPORTATION AND AIR QUALITY
WASHINGTON, DC 20460



CERTIFICATE OF CONFORMITY
2011 MODEL YEAR

Manufacturer: **IVECO S.P.A.**
Engine Family: **BVEXL04.5DTD**
Certificate Number: **VEX-STNRCL-11-07**
Intended Service Class: **NR 4 (37-75)**
Fuel Type: **DIESEL**
FELs: **NMHC + NOx: N/A NOx: N/A PM: N/A**
Effective Date: **8/26/2010**
Date Issued: **8/26/2010**

Karl J. Simon, Director
Compliance and Innovative Strategies Division
Office of Transportation and Air Quality

Pursuant to Section 111 and Section 213 of the Clean Air Act (42 U.S.C. sections 7411 and 7547) and 40 CFR Part 60 and Part 89, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following stationary and nonroad engines, by engine family, more fully described in the documentation required by 40 CFR Part 60 and 89, and produced in the stated model year.

This certificate of conformity covers only those new stationary and nonroad compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60 and 89 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60 and 89.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 89.129-96 and 89.506-96 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to a revocation or suspension of this certificate for reasons specified in 40 CFR Part 89. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void ab initio for other reasons specified in 40 CFR Part 89.

This certificate does not cover stationary and nonroad engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.